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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/973,240	10/09/2001	Bharath Rangarajan	E0808	5360
23623	7590	11/17/2004		
AMIN & TUROCY, LLP 1900 EAST 9TH STREET, NATIONAL CITY CENTER 24TH FLOOR, CLEVELAND, OH 44114			EXAMINER ARANCIBIA, MAUREEN GRAMAGLIA	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/973,240

Applicant(s)

RANGARAJAN ET AL.

Examiner

Maureen G. Arancibia

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 21-46 is/are pending in the application.
- 4a) Of the above claim(s) 27-46 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of the invention of Group I, Claims 21-26, in the reply filed on 09/28/2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. This application contains Claims 27-46 drawn to an invention nonelected without traverse in the response filed 09/28/2004. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### ***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,223,914 to Auda et al. in view of U.S. Patent 6,737,198 to Kamon.  
(References were cited in the previous Office action.)

Auda et al. teaches a follow-up system for an etch process, wherein a chamber is provided for patterning a first coating comprising a resist (Column 2, Line 36); a first dispenser deposits a second coating (Column 2, Lines 37-38); a second dispenser deposits a developer to form a negative resist (Column 2, Lines 44-47); and a measuring system 32 measures an operating parameter. A processor (computer 34) is coupled to the measuring system (Column 2, Line 32-Column 3, Line 25).

Auda et al. fails to teach a planarization component.

Kamon teaches performing CMP with an apparatus such as that shown in Figure 6 in a photomask fabrication method, in order to form a shade pattern 11. (ex. Second Embodiment) CMP is also a well-known suitable means of smoothing and planarizing the surface of a substrate.

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to modify the apparatus of Auda et al. to provide a CMP apparatus. The motivation for doing so would have been to ensure that the surface of the resulting substrate is smoothed after the depositing and developing of the layers of the substrate.

In regards to Claim 22, Auda et al. teaches that the measuring system can comprise an ellipsometer (Column 7, Lines 28-31), or a spectrometer (32).

In regards to Claim 23, Auda et al. teaches that computer 34 receives data. The data is inherently stored or processed in a memory.

In regards to Claim 24, the combination of Auda et al. and Kamon as applied to Claim 21 teaches that the planarization apparatus is a CMP apparatus.

In regards to Claim 25, the ellipsometer or spectrometer taught by Auda et al. would be capable of measuring thickness. (Column 7, Lines 7-10)

Note that the apparatus taught by Auda et al. and Kamon is capable of performing the other recited functions, such as forming an inverse pattern on a substrate. These are recitations of intended use, and are not given patentable weight.

5. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Auda et al. and Kamon as applied to Claim 21 above, and further in view

of U.S. Patent 6,492,068 to Suzuki. (This reference was cited in the previous Office action.)

The teachings of Auda et al. and Kamon were discussed above.

The combination of Auda et al. and Kamon as applied to Claim 21 fails to teach trim etching.

Suzuki uses the apparatus of Figure 1, with an etchant dispenser (Column 7, Lines 35-36), to trim etch semiconductors.

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to provide a component to trim-etch the substrate in the apparatus taught by the combination of Auda et al. and Kamon. The motivation for doing so, as taught by Suzuki (Column 14, Lines 52-55) would have been to adjust or control the pattern dimensions.

Note that the apparatus taught by Auda et al. and Kamon is capable of performing the other recited functions, such as measuring the trim etch. These are recitations of intended use, and are not given patentable weight.

### ***Response to Arguments***

6. Applicant's arguments filed 09/28/2004 have been fully considered but they are not persuasive.

7. In response to Applicant's request for rejoinder, the Examiner notes that Claims 21-26 are drawn to an apparatus for dispensing resist, not to a product, as Applicant asserts in the response filed on 09/28/2004. Allowance of apparatus claims does not

entitle rejoinder of claims drawn to a process of use of the apparatus. MPEP § 821.04 refers only to product and process claims.

8. In response to applicant's argument that the cited references, either alone or separately, do not expressly teach forming "a pattern on the substrate that is approximately an inverse pattern of the patterned first coating," the Examiner responds that the claims are drawn to an apparatus. The teachings of the prior art, as detailed above, meet the structural limitations of Claims 21-26. The functional recitations of certain components (ex. the recitations in Claim 21 that a dispenser deposits a certain type of coating, and that use of the planarization component results in an inverse pattern being formed on the substrate) are recitations of intended use.

A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

9. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

### **Conclusion**

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

11. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maureen G. Arancibia whose telephone number is (571) 272-1219. The examiner can normally be reached on 10:30-7:00, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (571) 272-1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Maureen G. Arancibia



GREGORY MILLS  
SUPERVISOR, PATENT EXAMINER  
TECHNOLOGY CENTER 1/00